

Independent claim (one and only) of Japanese Kokai 10-137250

Title: Suction biopsy tool.

Suction biopsy tool characterized as being outfitted with:

a sheath part insertable in the forceps channel of an endoscope;

a tip treatment part arranged on the tip part of this sheath part and having a suction port;

a suction means provided in the base-end side of the aforementioned sheath part that exerts suction force on the aforementioned suction hole by way of the aforementioned suction hole and sucks organic tissue into the aforementioned tip treatment part;

a cutter member arranged inside the aforementioned tip treatment part and mobile along the axial direction of the aforementioned sheath;

and a cutaway tissue storage part arranged on the tip side more than the aforementioned suction hole in the aforementioned tip treatment part and that is pliable such that cut away tissue is stored through the motion of the aforementioned cutter member.

SUCTION BIOPSY TOOL

Patent Number: JP10137250

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Application
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IPC Classification: A61B10/00

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Equivalents:

Abstract

PROBLEM TO BE SOLVED: To house many excised organismic tissues by disposing a suction means and a cutter member inside a tip treatment part and arranging an excised tissue housing part housing flexibility for housing the organismic tissues excised by the movement of the cutter member on the tip side from the suction hole of the tip treatment part.

SOLUTION: The cutter member 10 is disposed movably in an axial direction inside the treatment part main body 6 composed of a cylindrical body of the tip treatment part 5, the tip part of an operation wire 12 is fixed to the cutter member 10 and the base end part of the operation wire 12 is extended to the side of an operation part 3 and fixed to a slider 13. Also, a cylindrical excised tissue housing part 14 for housing the organismic tissues excised by the forward movement of the cutter member 10 is connected to the tip part of the treatment part main body 6 and the outer end part of a flap 15 having the flexibility for openably and closably closing the rear end part opening surface of the excised tissue housing part 14 is fixed to a connection part between the excised tissue housing part 14 and the treatment part main body 6 of the tip treatment part 5 on the inner peripheral surface of the excised tissue housing part 14.

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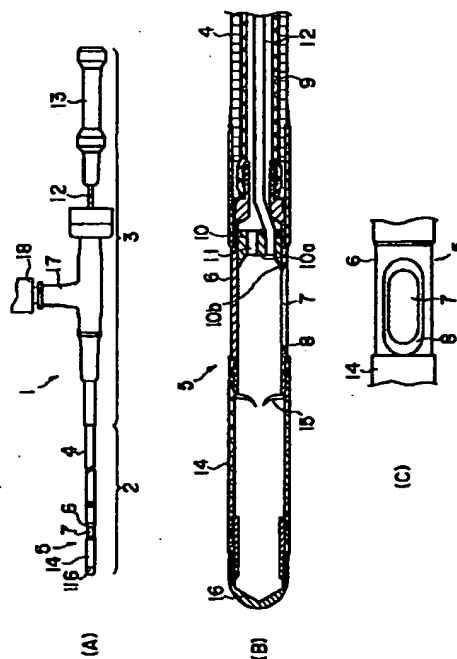
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(54) 【発明の名称】 吸引生検具

(57) 【要約】

【課題】本発明は、切除された多数の生体組織を収納することができるとともに、内視鏡の鉗子チャンネル内への挿通性が良好である吸引生検具を提供することを最も主要な特徴とする。

【解決手段】先端処置部5における吸引孔7よりも先端側に配置された切除組織収納部14を可撓性を有する材料で形成したものである。



【特許請求の範囲】

【請求項1】 内視鏡の鉗子チャンネルに挿通可能なシース部と、このシース部の先端部に配置され、吸引孔を備えた先端処置部と、前記シース部の手元側に設けられ、前記シース部内を通して前記吸引孔に吸引力を作用させて前記吸引孔を通して前記先端処置部内に生体組織を吸引する吸引手段と、前記先端処置部内に前記シース部の軸方向に沿って移動可能に配設されたカッタ部材と、前記先端処置部における前記吸引孔よりも先端側に配置され、前記カッタ部材の移動により切除された生体組織を収納する可撓性を有する切除組織収納部とを具備したことを特徴とする吸引生検具。

【発明の詳細な説明】

【0001】

【発明の属する技術分野】本発明は、経内視鏡的に生体組織を吸引、切除して組織標本を採取する吸引生検具に関する。

【0002】

【従来の技術】一般に、体内の生体組織を採取する吸引生検具として、例えば米国特許第4,651,753号に開示されている構成のものがある。この吸引生検具には、図8に示すように内視鏡の鉗子チャンネルに挿入される可撓性のシース部aが設けられている。このシース部aの先端部には先端処置部bが配置されている。この先端処置部bには吸引孔cが設けられている。

【0003】また、シース部aの先端処置部b内には生体組織を切除するカッタ部材dが軸方向に移動可能に配設されている。さらに、先端処置部bにおける吸引孔cよりも先端側には生体組織収納部eが設けられている。

【0004】そして、吸引生検具の使用時には内視鏡の鉗子チャンネルを通して可撓性のシース部aが患者の体内に挿入される。続いて、シース部aの先端処置部bに設けられた吸引孔cを体内の生体組織の採取部位に当接させる。その後、体外からシース部aの内部に陰圧をかけて吸引孔cに採取部位の生体組織を吸引した状態で、シース部aの先端処置部b内のカッタ部材dを手元側から先端側に移動する動作によって生体組織を切除する。このとき切除された生体組織の組織片は先端処置部bの生体組織収納部eの内部に収納される。さらに、以上の操作を複数回繰り返すことにより、複数個の生体組織を採取できるようになっている。

【0005】

【発明が解決しようとする課題】上記従来構成のものにあっては吸引孔cの先端側に設けられた生体組織収納部eは硬質な先端処置部bと一体に形成されている。そのため、この生体組織収納部eは可撓性を持たないために、シース部aの先端部には配設される先端処置部bによる湾曲不可能な硬質部の全長が長くなるので、内視鏡の鉗子チャンネルへの挿通時に湾曲部分を通過することが困難となる問題がある。

【0006】また、先端処置部bの全長を長くすることが難しいので、生体組織収納部8の長さが制限される問題がある。そのため、内視鏡の鉗子チャンネルを通して体内に挿入される1回の吸引生検具の挿入作業時に採取可能な生体組織の数量も少なくなる問題がある。

【0007】本発明は、上記事情に着目してなされたもので、その目的は、切除された多数の生体組織を収納することができるとともに、内視鏡の鉗子チャンネル内への挿通性が良好である吸引生検具を提供することにある。

【0008】

【課題を解決するための手段】本発明は内視鏡の鉗子チャンネルに挿通可能なシース部と、このシース部の先端部に配置され、吸引孔を備えた先端処置部と、前記シース部の手元側に設けられ、前記シース部内を通して前記吸引孔に吸引力を作用させて前記吸引孔を通して前記先端処置部内に生体組織を吸引する吸引手段と、前記先端処置部内に前記シース部の軸方向に沿って移動可能に配設されたカッタ部材と、前記先端処置部における前記吸引孔よりも先端側に配置され、前記カッタ部材の移動により切除された生体組織を収納する可撓性を有する切除組織収納部とを具備したことを特徴とする吸引生検具である。上記構成により、生体組織の採取時には吸引手段からの吸引力によってシース部の先端処置部の吸引孔に生体組織を引き込む。この状態で、カッタ部材を軸方向に沿って先端側に移動操作させることにより、カッタ部材と吸引孔との間のせん断により生体組織の切除を行う。ここで切除された生体組織は吸引孔よりも先端側の切除組織収納部に収納する。さらに、複数の生体組織を切除、収納した後にシース部を内視鏡の鉗子チャンネルより抜去して、生体組織を回収する。そして、内視鏡の鉗子チャンネルへの挿通時に湾曲部分を通過する際に切除組織収納部の可撓性によって湾曲部分の形状に応じて切除組織収納部を変形させるようにしたものである。

【0009】

【発明の実施の形態】以下、本発明の第1の実施の形態を図1(A)～(C)乃至図4を参照して説明する。図1(A)は本実施の形態の吸引生検具1全体の概略構成を示すものである。

【0010】この吸引生検具1には、内視鏡の鉗子チャンネルに挿通可能な細長い挿入部2と、この挿入部2の基端部に連結された手元側の操作部3とが設けられている。さらに、挿入部2には可撓性を有するシース部4と、このシース部4の先端側に配設された先端処置部5とが設けられている。

【0011】ここで、シース部4は、ステンレス鋼線の密巻きコイル等により構成されている。そして、このシース部4は可撓性と共に高い捻り剛性を有し、操作部3と先端処置部5との間で回転トルクの伝達が可能になっている。

【0012】また、先端処置部5には図1(B)に示すように円筒体からなる処置部本体6が設けられている。この処置部本体6の周面には図1(C)に示すように吸引孔7が形成されている。この吸引孔7の周縁部位には例えば20°から60°程度の鋭角な外刃8が形成されている。さらに、処置部本体6の手元側端部にはシース部4の内部に配設された吸引チューブ9の先端部が連結されている。

【0013】また、処置部本体6の内部にはカッタ部材10が軸方向に移動可能に配設されている。このカッタ部材10にはベース円板10aと、このベース円板10aの先端面から前方に向けて突設された例えば20°から60°程度の鋭角なリング状の内刃10bとが設けられている。ここで、ベース円板10aにはカッタ部材10の前後を連通する連通孔11が軸方向に延設されている。

【0014】また、カッタ部材10には操作ワイヤ(操作手段)12の先端部が固着されている。この操作ワイヤ12の基端部は操作部3側に延出されている。この操作部3の基端部にはシース部4の軸方向に摺動自在なスライダ13が設けられている。このスライダ13には操作ワイヤ12の基端部が固着されている。そして、このスライダ13によって操作ワイヤ12を介してカッタ部材10がシース部4の軸方向に押し引き操作されるようになっている。

【0015】また、先端処置部5の処置部本体6とカッタ部材10との間の隙間はカッタ部材10がガタなく、スムーズに軸方向に摺動可能な値、例えば0.01mm以上、0.05mm以下程度に設定されている。なお、先端処置部5の処置部本体6及びカッタ部材10は、例えばステンレス鋼、チタン、黄銅等の金属材料や、アクリロニトリル・ブタジエン・スチレン、ポリカーボネート等の樹脂材料により形成されている。

【0016】また、処置部本体6の先端部にはカッタ部材10の前進移動により切除された生体組織を収納する円筒状の切除組織収納部14が連結されている。この切除組織収納部14は可撓性を有する樹脂材料、例えばポリテトラフルオロエチレン、テトラフルオロエチレン-ヘキサフルオロプロピレン共重合体、ポリエチレン等から形成されている。

【0017】また、切除組織収納部14の内周面には切除組織収納部14と先端処置部5の処置部本体6との間の接続部に切除組織収納部14の後端部開口面を開閉可能に閉塞する可撓性を有するフラップ15の外端部が固着されている。このフラップ15の内端部は常時は図2に示すように切除組織収納部14の後端部開口面を略閉塞する状態で保持されている。そして、カッタ部材10の前進移動時には図3に示すようにこのカッタ部材10によってフラップ15が切除組織収納部14内側に押し倒される状態に弾性変形し、切除組織収納部14の後端

部開口面が開口されるようになっている。このとき弾性変形したフラップ15は図4に示すようにカッタ部材10が後方側に引き戻される動作にともないこのフラップ15の弾力によって切除組織収納部14の後端部開口面を閉塞する元の状態に復帰するようになっている。さらに、切除組織収納部14の先端部にはこの切除組織収納部14の先端開口部を閉塞するキャップ16が取り外し可能に設けられている。

【0018】また、操作部3には吸引コック17が突設されている。この吸引コック17の内端部には吸引チューブ9の基端部が連結されている。さらに、吸引コック17の外端部には吸引手段18が接続されており、吸引チューブ9からカッタ部材10のベース円板10aの連通孔11を経由して先端処置部5までは気密が保たれている。

【0019】次に、上記構成の作用について説明する。本実施の形態の吸引生検具1の使用時には予め吸引生検具1の先端処置部5内のカッタ部材10が図2に示すように吸引孔7の後方位置に移動された状態にセットされる。この状態で、吸引生検具1の挿入部2を内視鏡の鉗子チャンネルを通して体腔内に挿入し、患者の体内の生体組織の採取部位に誘導する。このとき、操作部3を捻ることにより、先端処置部5を回転追従させ、吸引孔7を生体組織の採取部位に当接させる。

【0020】その後、吸引手段18を作動させて吸引チューブ9の内腔からカッタ部材10の連通孔11を通して先端処置部5の内部を陰圧にすると、図2に示すように生体組織Hが吸引孔7を通して先端処置部5の内部に引き込まれる。

【0021】さらに、陰圧を保持したままスライダ13を図1(A)中で左側に押し出し操作して操作ワイヤ12を介してカッタ部材10を先端側に摺動させる。このとき、吸引孔7から先端処置部5内に引き込まれている生体組織Hは、カッタ部材10の内刃10bと吸引孔7の外刃8との間でせん断により切除される。

【0022】切除後、続いてカッタ部材10をさらに先端側に移動する。このときのカッタ部材10の前進移動にともない図3に示すように切除組織収納部14のフラップ15がこのカッタ部材10によって切除組織収納部14内側に押し倒される状態に弾性変形し、切除組織収納部14の後端部開口面が開口される。そのため、切除された生体組織片H₁はカッタ部材10によって切除組織収納部14内に押し込まれる。

【0023】その後、カッタ部材10が後方側に引き戻される動作にともないフラップ15は図4に示すようにこのフラップ15の弾力によって切除組織収納部14の後端部開口面を閉塞する元の状態に復帰する。このとき、切除組織収納部14内に収納された生体組織片H₁は図4に示すようにフラップ15に係止されるので、切除組織収納部14内に留まり、先端処置部5の吸引孔7

側には移動しない。これにより、1回目の生体組織H₁の採取操作が終了する。

【0024】また、上記生体組織片H₁の採取操作は必要個数の生体組織片H₁が採取できるまで繰り返される。さらに、必要個数の生体組織片H₁の採取が終了した後、吸引生検具1を内視鏡の鉗子チャンネルより抜去した状態で、キャップ16を取り外し、複数の生体組織片H₁を回収する。

【0025】そこで、上記構成のものにあつては次の効果を奏する。すなわち、先端処置部5の先端部の切除組織収納部14に可撓性を持たせたので、内視鏡の鉗子チャンネルへの吸引生検具1の挿入部2の挿通時に湾曲部分を通過する際に切除組織収納部14の可撓性によって湾曲部分の形状に応じて切除組織収納部14を变形させることができる。そのため、内視鏡の鉗子チャンネルへの吸引生検具1の挿入部2の挿通性が向上する。

【0026】また、切除組織収納部14の全長を長くすることができるので、採取することができる生体組織片H₁の量を増加させることができる。そのため、吸引生検具1の挿入部2を内視鏡の鉗子チャンネルへ挿入する1回の挿入操作で多数の生体組織片H₁を効率良く採取することができるので、生体組織片H₁の採取作業の作業性を高めることができる。

【0027】さらに、切除組織収納部14の内周面にこの切除組織収納部14の後端部開口面を開閉可能に閉塞する可撓性を有するフラップ15を設けたので、切除組織収納部14に収納した生体組織片H₁が先端処置部5の吸引孔7側に移動することをフラップ15により防止することができる。そのため、連続的な生体組織片H₁の採取に支障を来さないという効果がある。

【0028】また、図5(A)～(D)乃至図7は本発明の第2の実施の形態を示すものである。なお、図5(A)～(D)乃至図7中で、第1の実施の形態(図1(A)～(C)乃至図4参照)と同一の部分には同一の符号を付し、その説明は省略する。

【0029】本実施の形態では、切除組織収納部14の後端部開口面を開閉可能に閉塞する第1の実施の形態のフラップ11の代わりに処置部本体6の内周面に矩形断面形状のガイド部材21を突設するとともに、カッタ部材10の構成を次の通り変更したものである。

【0030】すなわち、ガイド部材21には図5(B)～(D)に示すように処置部本体6の内周面に接合される略弓形断面の接合部22と、この接合部22の中央部位に内方向に向けて突設された矩形断面形状の突設部23とが設けられている。さらに、突設部23の内端面(図5(A)中で下端面)には図5(A)に示すように後端部側(手元側)から先端部側に向かうにしたがってこの突設部23の高さ(下向きの突出量)が徐々に大きくなるテーパ面23aが形成されている。

【0031】さらに、本実施の形態のカッタ部材10の

ベース円板10aにはガイド部材21と係合する係合溝24が形成されている。この係合溝24の溝深さは突設部23における図5(A)中で左端部の最大突出部分と対応する深さに設定されている。そして、カッタ部材10が図5(A)、(D)に示すように手元側に引っ張られた状態で保持されている場合には係合溝24を通してカッタ部材10の前後が連通し、カッタ部材10が先端側に押し出し操作された場合にはカッタ部材10の係合溝24全体がガイド部材21の突設部23によって殆ど閉塞されるようになっている。

【0032】次に、上記構成の作用について説明する。本実施の形態の吸引生検具1の使用時には予め吸引生検具1の先端処置部5内のカッタ部材10が図5(A)に示すように吸引孔7の後方位置に移動された状態にセットされる。この状態で、吸引生検具1の挿入部2を内視鏡の鉗子チャンネルを通して体腔内に挿入し、患者の体内の生体組織の採取部位に誘導する。このとき、操作部3を捻ることにより、先端処置部5を回転追従させ、吸引孔7を生体組織の採取部位に当接させる。

【0033】その後、吸引手段18を作用させて吸引チューブ9の内腔からカッタ部材10の係合溝24を通して先端処置部5の内部を陰圧にすると、生体組織Hが吸引孔7を通して先端処置部5の内部に引き込まれる(図2参照)。

【0034】さらに、陰圧を保持したままスライダ13を押し出し操作して操作ワイヤ12を介してカッタ部材10を先端側に摺動させる。このとき、吸引孔7から先端処置部5内に引き込まれている生体組織Hは、カッタ部材10の内刃10bと吸引孔7の外刃8との間でせん断により切除される。

【0035】切除後、続いてカッタ部材10をさらに先端側に移動する。このときのカッタ部材10の前進移動にともない図6に示すように切除された生体組織片H₂が切除組織収納部14内に押し込まれる。

【0036】その後、カッタ部材10が後方側に引き戻される。このとき、ガイド部材21の突設部23の高さ(下向きの突出量)は先端側が高くなっていることにより、生体組織片H₂は突設部23により係止されて切除組織収納部14内に留まり、カッタ部材10から剥離される。

【0037】さらに、切除組織収納部14に収納された生体組織片H₂は突設部23により係止されるので、切除組織収納部14内に滞留し、先端処置部5の吸引孔7側には移動しない。これにより、1回目の生体組織H₂の採取操作が終了する。

【0038】また、上記生体組織片H₂の採取操作は必要個数の生体組織片H₂が採取できるまで繰り返される。さらに、必要個数の生体組織片H₂の採取が終了した後、吸引生検具1を内視鏡の鉗子チャンネルより抜去した状態で、キャップ16を取り外し、複数の生体組織

片H₂を回収する。

【0039】そこで、上記構成のものにあっても第1の実施の形態と同様の効果があるとともに、これに加えて、本実施の形態では特に、カッタ部材10を先端処置部5の手元側に復帰する際に切除された生体組織片H₂が突設部23により強制的にカッタ部材10から剥離され、切除組織収納部14内で保持されるため、生体組織片H₂がカッタ部材10に貼り付くことがなく、次の生体組織片H₂の採取作業に支障を来さない効果がある。

【0040】なお、本発明は上記実施の形態に限定されるものではなく、本発明の要旨を逸脱しない範囲で種々変形実施できることは勿論である。次に、本出願の他の特徴的な技術事項を下記の通り付記する。

記

(付記項1) 内視鏡の鉗子チャンネルに挿通可能なシース部と、前記シース部手元側に設けられた吸引手段と、前記シース部遠位端に位置した先端処置部と、前記先端処置部に設けられた吸引孔と、前記先端処置部の遠位端に設けられ、可撓性を有する切除組織収納部と、前記先端処置部内に配置されたカッタ部材から構成され、前記吸引手段により前記吸引孔を通して前記先端処置部内に生体組織を吸引し、前記先端処置部と前記カッタ部材の相対移動により生体組織を切除し、前記収納部に切除組織を収納することを特徴とする吸引生検具。

【0041】(付記項1の解決しようとする課題) しかしながら、米国特許第4651753号公報に開示される構造では、図8に示すように組織収納部eが吸引孔cの先端側に設けられ、かつ可撓性を持たないために、湾曲不可能な硬質部の全長が長くなり、内視鏡への挿通時に湾曲部分を通過することが困難となる。また、組織収納部eの長さが制限され、内視鏡への一回の挿入において採取可能な組織の数量も少なくなるという問題点があった。

【0042】本発明は前記の問題に鑑みてなされたもので、多数の切除組織を収納する収納部を有し、かつ内視鏡への挿通性が良好である吸引生検具を提供することを目的とする。

【0043】(付記項1の課題を解決するための手段および作用) 本発明は吸引生検具において、組織収納部を可撓性のある素材で構成したことを特徴とする。シース部を内視鏡の鉗子チャンネルに挿入し、シース部手元側に設けられた吸引手段により、シース部遠位端の先端処置部に設けられた吸引孔に生体組織を引き込む。カッタ部材を先端側に移動し、吸引孔とカッタ部材とのせん断により切除を行い、組織収納部に収納する。複数の組織を切除、収納した後に吸引生検具を内視鏡より抜去して、組織を回収する。

【0044】(付記項1の効果) 組織収納部が可撓性を持つことにより、内視鏡の湾曲部分への挿通性が向上する。また、組織収納部の全長を長くすることが可能な

ため、内視鏡への一回の挿入において多数の組織採取が可能となる。

【0045】(付記項2) 内視鏡の鉗子チャンネルに挿通可能なシース部と、前記シース部手元側に設けられた吸引手段と、前記シース部遠位端に位置した先端処置部と、前記先端処置部に設けられた吸引孔と、前記先端処置部の遠位端に設けられた切除組織収納部と、前記先端処置部内にカッタ部材を有し、前記先端処置部と前記カッタ部材の相対移動により生体組織を切除し、前記収納部に切除組織を収納する吸引生検具において、前記先端処置部の内面から中心軸方向に伸展する組織係止手段を設けたことを特徴とする吸引生検具。

【0046】(付記項3) 前記組織係止手段が弾性を有することを特徴とする付記項2の吸引生検具。

(付記項4) 前記組織係止手段が硬性であることを特徴とする付記項2の吸引生検具。

【0047】(付記項5) 前記組織係止手段が前記カッタ部に設けられた連通孔に係合し、前記組織係止手段の高さは先端側が高く、手元側が低いことを特徴とする付記項4の吸引生検具。

【0048】(付記項6) 前記収納部が可撓性を有することを特徴とする付記項2～5の吸引生検具。

(付記項1～6の従来技術) 本発明は、経内視鏡的に生体組織を吸引、切除して組織標本を採取する吸引生検具に関する。一般の吸引生検具で組織を採取するためには、可撓性のシース部を内視鏡の鉗子チャンネルに挿入し、先端部に設けられた吸引孔を体内の採取部位に当接させて、体外から陰圧をかけて吸引孔に組織を吸引する。先端部内に設けられたカッタを手元側から先端側に移動する動作によって組織を切除する。組織片は吸引孔の先端側に設けられた組織収納部に収納可能である。以上の操作により複数個の組織を採取する吸引生検具については米国特許第4651753号公報にて開示されている。

【0049】(付記項2～6の解決しようとする課題)

しかしながら、米国特許第4651753号公報に開示される構造では、収納部eに収納された切除組織が吸引生検具の移動等により吸引孔cの位置まで戻ってしまい、次の組織採取が不可能になる可能性がある。

【0050】本発明は前記の問題に鑑みてなされたもので、切除組織が収納部の外に移動しない吸引生検具を提供することを目的とする。

(付記項2～6の課題を解決するための手段および作用) 本発明は吸引生検具において、組織収納部の手元側に位置する先端処置部に組織係止手段を設けたことを特徴とする。内視鏡の鉗子チャンネルを通して吸引生検具を組織採取部位に誘導し、シース部手元側に設けられた吸引手段によって、先端処置部に設けられた吸引孔に生体組織を引き込む。カッタ部材を先端側に移動し、カッタ部材と吸引孔とのせん断により組織を切除し、組織

収納部に収納する。組織は組織係止手段により収納部から外に移動しない。複数の組織を切除、収納した後に吸引生検具を内視鏡より抜去して組織を回収する。

(付記項2～6の効果) 組織収納部に収納した組織片が先端処置部に移動することが無く、連続的な組織採取に支障を来さない。

【0051】

【発明の効果】本発明によれば、先端処置部における吸引孔よりも先端側に配置された切除組織収納部を可撓性を有する材料で形成したので、切除された多数の生体組織を収納することができるとともに、内視鏡の鉗子チャンネル内への挿通性を良好にすることができる。

【図面の簡単な説明】

【図1】 (A)は本発明の第1の実施の形態の吸引生検具全体の概略構成を示す側面図、(B)は第1の実施の形態の吸引生検具の挿入部の先端部の内部構成を示す縦断面図、(C)は第1の実施の形態の先端処置部の吸引孔を示す平面図。

【図2】 第1の実施の形態の吸引生検具のカッタ部材の動作状態を示す縦断面図。

【図3】 第1の実施の形態の吸引生検具のカッタ部材によって切除された生体組織を切除組織収納部に移動する動作状態を示す縦断面図。

【図4】 第1の実施の形態の吸引生検具の切除組織収納部内に切除された生体組織を収納した状態を示す縦断面図。

【図5】 (A)は本発明の第2の実施の形態の吸引生検具の要部構成を示す縦断面図、(B)は(A)のB-B線断面図、(C)は(A)のC-C線断面図、(D)は(A)のD-D線断面図。

【図6】 第2の実施の形態の吸引生検具のカッタ部材によって切除された生体組織を切除組織収納部に移動する動作状態を示す縦断面図。

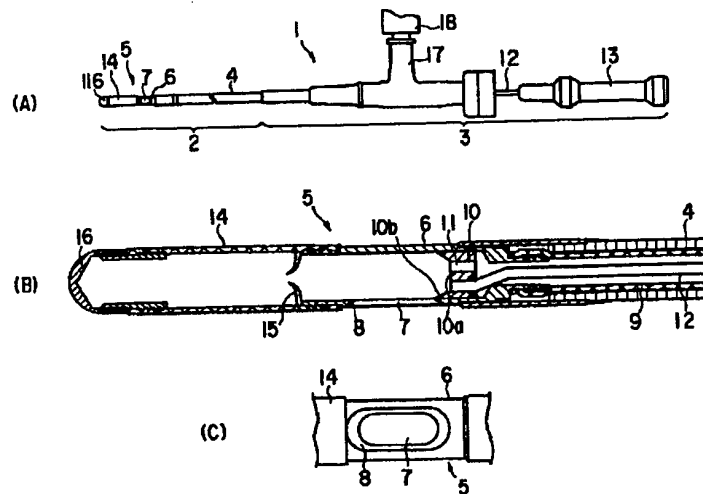
【図7】 第2の実施の形態の吸引生検具の切除組織収納部内に切除された生体組織を収納した状態を示す縦断面図。

【図8】 従来の吸引生検具の先端処置部の内部構成を示す縦断面図。

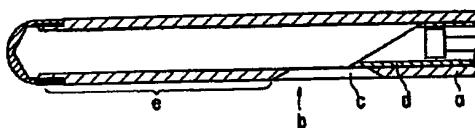
【符号の説明】

4	シース部
5	先端処置部
7	吸引孔
10	カッタ部材
14	切除組織収納部
18	吸引手段

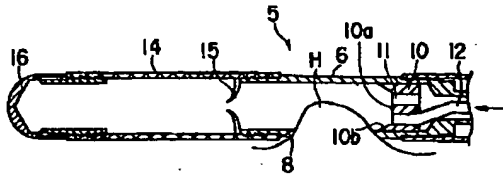
【図1】



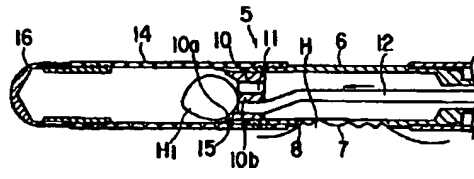
【図8】



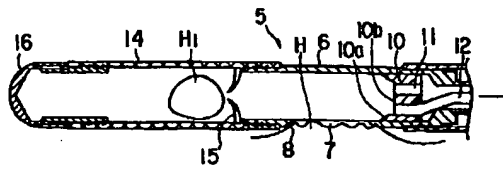
【図2】



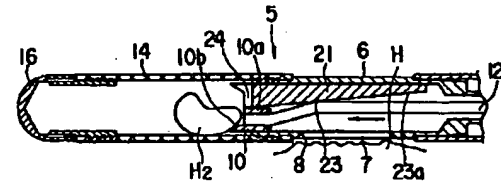
【図3】



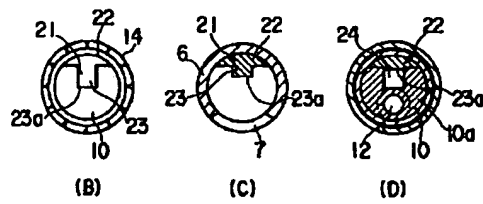
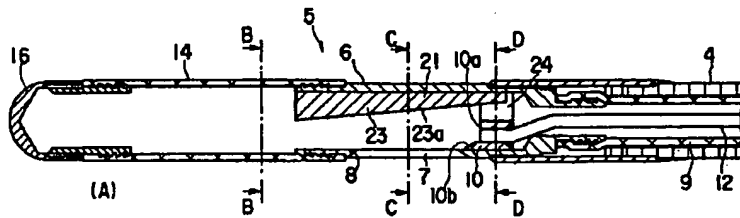
【図4】



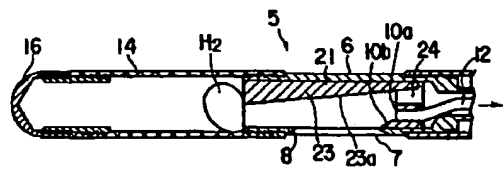
【図6】



【図5】



【図7】



フロントページの続き

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CLAIMS

[Claim(s)]

[Claim 1] The sheath section which can be inserted in the forceps channel of an endoscope, and the tip treatment section which has been arranged at the point of this sheath section and was equipped with the suction hole, A suction means for it to be prepared in the hand side of said sheath section, to make a suction force act on said suction hole through said sheath circles, and to attract a body tissue to said tip treatment circles through said suction hole, The cutter member arranged in said tip treatment circles movable in accordance with the shaft orientations of said sheath section, The aspiration-biopsy implement characterized by providing the excision organization stowage which has the flexibility which contains the body tissue which has been arranged at the tip side and excised from said suction hole in said tip treatment section by migration of said cutter member.

DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the aspiration-biopsy implement which passes, attracts and excises a body tissue endoscopically and extracts the preparation.

[0002]

[Description of the Prior Art] Generally, there is a thing of a configuration of being indicated by U.S. Pat. No. 4,651,753 as an aspiration-biopsy implement which extracts a body tissue in the living body. The flexible sheath section a inserted in the forceps channel of an endoscope as shown in drawing 8 is formed in this aspiration-biopsy implement. The tip treatment section b is arranged at the point of this sheath section a. The suction hole c is formed in this tip treatment section b.

[0003] Moreover, in the tip treatment section b of the sheath section a, the cutter member d which excises a body tissue is arranged by shaft orientations movable. Furthermore, the body tissue stowage e is established in the tip side from the suction hole c in the tip treatment section b.

[0004] And at the time of use of an aspiration-biopsy implement, the flexible sheath section a is inserted in a patient's inside of the body through the forceps channel of an endoscope. Then, the suction hole c prepared in the tip treatment section b of the sheath section a is made to contact at least the doner site of a body tissue in the living body. Then, where the body tissue like a doner site is attracted to the suction hole c, having applied negative pressure to the interior of the sheath section a from the outside of the body, a body tissue is excised by actuation which moves the cutter member d in the tip treatment section b of the sheath section a to a tip side from a hand side. The explant of the body tissue excised at this time is contained inside the body tissue

stowage e of the tip treatment section b. Furthermore, two or more body tissues can be extracted now by repeating the above actuation two or more times.

[0005]

[Problem(s) to be Solved by the Invention] If it is in the thing of a configuration conventionally [above-mentioned], the body tissue stowage e established in the tip side of the suction hole c is formed in the hard tip treatment section b and hard one. Therefore, since this body tissue stowage e does not have flexibility and the overall length of the hard section by the tip treatment section b arranged by the point of the sheath section a which cannot be curved becomes long, there is a problem from which it becomes difficult to pass a part for a bend at the time of the insertion to the forceps channel of an endoscope.

[0006] Moreover, since it is difficult to lengthen the overall length of the tip treatment section b, there is a problem to which the die length of the body tissue stowage 8 is restricted. Therefore, there is a problem decreasing [quantity's of a body tissue extractable at the time of one insertion of an aspiration-biopsy implement inserted in the inside of the body through the forceps channel of an endoscope].

[0007] This invention was made paying attention to the above-mentioned situation, and while the purpose can contain the body tissue of excised a large number, the insertion nature into the forceps channel of an endoscope is to offer a good aspiration-biopsy implement.

[0008]

[Means for Solving the Problem] The tip treatment section which this invention has been arranged at the sheath section which can be inserted in the forceps channel of an endoscope, and the point of this sheath section, and was equipped with the suction hole, A suction means for it to be prepared in the hand side of said sheath section, to make a suction force act on said suction hole through said sheath circles, and to attract a body tissue to said tip treatment circles through said suction hole, The cutter member arranged in said tip treatment circles movable in accordance with the shaft orientations of said sheath section, It is the aspiration-biopsy implement characterized by providing the excision organization stowage which has the flexibility which contains the body tissue which has been arranged at the tip side and excised from said suction hole in said tip treatment section by migration of said cutter member. By the above-mentioned configuration, a body tissue is drawn in the suction hole of the tip treatment section of the sheath section with the suction force from a suction means at the time of extraction of a body tissue. A body tissue is excised by ** which is not carried between a cutter member and a suction hole by carrying out migration actuation of the cutter member in accordance with shaft orientations in this condition at a tip side. The body tissue excised here is contained to the excision organization stowage by the side of a tip rather than a suction hole. Furthermore, after excising and containing two or more body tissues, extraction of the sheath section is carried out from the forceps channel of an endoscope, and body tissues are collected. And in case a part for a bend is passed at the time of the insertion to the forceps channel of an endoscope, it is made to make an excision organization stowage transform according to the configuration for a bend by the flexibility of an excision organization stowage.

[0009]

[Embodiment of the Invention] Hereafter, the gestalt of operation of the 1st of this

invention is explained with reference to drawing 1 (A) - (C) thru/or drawing 4 . Drawing 1 (A) shows the outline configuration of the aspiration-biopsy implement 1 whole of the gestalt of this operation.

[0010] The long and slender insertion section 2 which can be inserted in the forceps channel of an endoscope, and the control unit 3 by the side of the hand connected with the end face section of this insertion section 2 are formed in this aspiration-biopsy implement 1. Furthermore, the sheath section 4 which has flexibility, and the tip treatment section 5 arranged in the tip side of this sheath section 4 are formed in the insertion section 2.

[0011] Here, the sheath section 4 is constituted by the close-winding coil of a stainless steel line etc. And this sheath section 4 has high twist rigidity with flexibility, and transfer of running torque is attained between a control unit 3 and the tip treatment section 5.

[0012] Moreover, the treatment section body 6 which consists of a cylinder object as shown in drawing 1 (B) is formed in the tip treatment section 5. As shown in drawing 1 (C), the suction hole 7 is formed in the peripheral surface of this treatment section body 6. The cutting edge 8 is formed in the periphery part of this suction hole 7 20 to about 60 degrees acute angle outside. Furthermore, the point of the suction tube 9 arranged in the interior of the sheath section 4 is connected with the hand side edge section of the treatment section body 6.

[0013] Moreover, the cutter member 10 is arranged in the interior of the treatment section body 6 by shaft orientations movable. Inner cutting-edge 10b of the 20 to about 60 degrees [which protruded towards the front from the apical surface of base disk 10a and this base disk 10a] shape of an acute angle ring is prepared in this cutter member 10. Here, the free passage hole 11 which opens the cutter member 10 order for free passage is installed in base disk 10a by shaft orientations.

[0014] Moreover, to the cutter member 10, the point of the actuation wire (actuation means) 12 has fixed. The end face section of this actuation wire 12 has extended to the control unit 3 side. The slider 13 which can slide on the shaft orientations of the sheath section 4 freely is formed in the end face section of this control unit 3. To this slider 13, the end face section of the actuation wire 12 has fixed. And push length actuation of the cutter member 10 is carried out through the actuation wire 12 at the shaft orientations of the sheath section 4 by this slider 13.

[0015] Moreover, as for the clearance between the treatment section body 6 of the tip treatment section 5, and the cutter member 10, the cutter member 10 does not have backlash, and it is smoothly set as shaft orientations by the sliding more than possible value, for example, 0.01mm, and 0.05mm or less extent. In addition, the treatment section body 6 and the cutter member 10 of the tip treatment section 5 are formed with resin ingredients, such as metallic materials, such as stainless steel, titanium, and brass, and acrylonitrile styrene butadiene rubber, a polycarbonate.

[0016] Moreover, the excision organization stowage 14 of the shape of a cylinder which contains the body tissue excised by advance migration of the cutter member 10 is connected with the point of the treatment section body 6. This excision organization stowage 14 is formed from a resin ingredient which has flexibility, for example, polytetrafluoroethylene, and tetrafluoroethylene-hexafluoropropylene copolymer, polyethylene, etc.

[0017] Moreover, to the inner skin of the excision organization stowage 14, the heel of

the flap 15 which has the flexibility blockaded possible [closing motion of the back end section effective area of the excision organization stowage 14] in the connection between the treatment section bodies 6 of the excision organization stowage 14 and the tip treatment section 5 has fixed. The toe of this flap 15 is held in the condition of always carrying out the abbreviation lock out of the back end section effective area of the excision organization stowage 14 as shown in drawing 2 . And as shown in drawing 3 at the time of advance migration of the cutter member 10, elastic deformation is changed into the condition that a flap 15 is pushed down by this cutter member 10 at the excision organization stowage 14 inside, and opening of the back end section effective area of the excision organization stowage 14 is carried out. The flap 15 which carried out elastic deformation at this time returns to the condition of the origin which blockades the back end section effective area of the excision organization stowage 14 by the elasticity of this flap 15 with the actuation by which the cutter member 10 is pulled back at a back side, as shown in drawing 4 . Furthermore, the cap 16 which blockades tip opening of this excision organization stowage 14 is formed in the point of the excision organization stowage 14 dismountable.

[0018] Moreover, the suction cock 17 protrudes on the control unit 3. The end face section of the suction tube 9 is connected with this suction cock's 17 toe. Furthermore, the suction means 18 is connected to the suction cock's 17 heel, and the airtight is maintained from the suction tube 9 to the tip treatment section 5 via the free passage hole 11 of base disk 10a of the cutter member 10.

[0019] Next, an operation of the above-mentioned configuration is explained. It is set to the condition of having been moved to the back location of the suction hole 7 as the cutter member 10 in the tip treatment section 5 of the aspiration-biopsy implement 1 showed beforehand drawing 2 at the time of use of the aspiration-biopsy implement 1 of the gestalt of this operation. In this condition, the insertion section 2 of the aspiration-biopsy implement 1 is inserted into a coelome through the forceps channel of an endoscope, and it guides at least to the doner site of the body tissue a patient's inside of the body. Rotation flattery of the tip treatment section 5 is carried out, and the suction hole 7 is made to contact at least the doner site of a body tissue by twisting a control unit 3 at this time.

[0020] Then, if the suction means 18 is operated and the interior of the tip treatment section 5 is made into negative pressure through the free passage hole 11 of the cutter member 10 from the lumen of the suction tube 9, as shown in drawing 2 , a body tissue H will be drawn in the interior of the tip treatment section 5 through the suction hole 7.

[0021] Furthermore, a slider 13 is extruded and operated on left-hand side in drawing 1 (A), with negative pressure held, and the cutter member 10 is slid on a tip side through the actuation wire 12. At this time, the body tissue H drawn in the tip treatment section 5 is excised from the suction hole 7 by shearing between cutting edges 8 outside inner cutting-edge 10b of the cutter member 10, and the suction hole 7.

[0022] The cutter member 10 is continuously moved further to a tip side after excision. As shown in drawing 3 with advance migration of the cutter member 10 at this time, the flap 15 of the excision organization stowage 14 changes elastic deformation into the condition of being pushed down by this cutter member 10 at the excision organization stowage 14 inside, and opening of the back end section effective area of the excision organization stowage 14 is carried out. Therefore, excised piece H1 of a body tissue It

is pushed in by the cutter member 10 in the excision organization stowage 14.
[0023] Then, a flap 15 returns to the condition of the origin which blockades the back end section effective area of the excision organization stowage 14 by the elasticity of this flap 15 as shown in drawing 4 with the actuation by which the cutter member 10 is pulled back at a back side. Piece H1 of a body tissue contained in the excision organization stowage 14 at this time Since it is stopped by the flap 15 as shown in drawing 4 , it stops in the excision organization stowage 14, and does not move to the suction hole 7 side of the tip treatment section 5. Thereby, it is the 1st body tissue H1. Extraction actuation is completed.

[0024] Moreover, the above-mentioned piece H1 of a body tissue Extraction actuation is the piece H1 of a body tissue of the need number. It is repeated until it is extractable. Furthermore, piece H1 of a body tissue of the need number After extraction was completed, where extraction of the aspiration-biopsy implement 1 is carried out from the forceps channel of an endoscope, cap 16 is removed, and they are two or more pieces H1 of a body tissue. It collects.

[0025] Then, the following effectiveness is done so if it is in the thing of the above-mentioned configuration. That is, in case a part for a bend is passed at the time of insertion of the insertion section 2 of the aspiration-biopsy implement 1 to the forceps channel of an endoscope, the excision organization stowage 14 can be made to transform according to the configuration for a bend by the flexibility of the excision organization stowage 14, since flexibility was given to the excision organization stowage 14 of the point of the tip treatment section 5. Therefore, the insertion nature of the insertion section 2 of the aspiration-biopsy implement 1 to the forceps channel of an endoscope improves.

[0026] Moreover, piece H1 of a body tissue extractable since the overall length of the excision organization stowage 14 can be lengthened An amount can be made to increase. Therefore, they are many pieces H1 of a body tissue by one insertion actuation which inserts the insertion section 2 of the aspiration-biopsy implement 1 in the forceps channel of an endoscope. Since it is efficiently extractable, it is the piece H1 of a body tissue. The workability of an extraction activity can be raised.

[0027] Furthermore, piece H1 of a body tissue contained to the excision organization stowage 14 since the flap 15 which has the flexibility blockaded in the inner skin of the excision organization stowage 14 possible [closing motion of the back end section effective area of this excision organization stowage 14] was formed It can prevent moving to the suction hole 7 side of the tip treatment section 5 by the flap 15. Therefore, continuous piece H1 of a body tissue It is effective in not causing trouble to extraction.

[0028] Moreover, drawing 5 (A) - (D) thru/or drawing 7 show the gestalt of operation of the 2nd of this invention. In addition, the same sign is given to the part same in drawing 5 (A) - (D) thru/or drawing 7 as the gestalt (drawing 1 (A) refer to - (C) thru/or drawing 4) of the 1st operation, and the explanation is omitted.

[0029] With the gestalt of this operation, while protruding the guide member 21 of a rectangle cross-section configuration on the inner skin of the treatment section body 6 instead of the flap 11 of the gestalt of the 1st operation blockaded possible [closing motion of the back end section effective area of the excision organization stowage 14], the configuration of the cutter member 10 is changed as follows.

[0030] That is, the joint 22 of the abbreviation ogival section joined to the inner skin of

the treatment section body 6 as shown in drawing 5 (B) - (D), and the protrusion section 23 of the rectangle cross-section configuration which protruded on the central part of this joint 22 towards inboard are formed in the guide member 21. Furthermore, taper side 23a to which the height (the downward amount of protrusions) of this protrusion section 23 becomes large gradually is formed as are shown in the inner end face (it is a lower limit side in drawing 5 (A)) of the protrusion section 23 at drawing 5 (A) and it goes to a point side from a back end section side (hand side).

[0031] Furthermore, the engagement slot 24 which engages with the guide member 21 is formed in base disk 10a of the cutter member 10 of the gestalt of this operation. The channel depth of this engagement slot 24 is set as a part for the maximum lobe of the left end section, and the corresponding depth in drawing 5 (A) in the protrusion section 23. And as the cutter member 10 shows drawing 5 (A) and (D), when being held in the condition of having been pulled at the hand side, the cutter member 10 order is open for free passage through the engagement slot 24, and when extrusion actuation of the cutter member 10 is carried out at a tip side, the engagement slot 24 whole of the cutter member 10 is almost blockaded by the protrusion section 23 of the guide member 21.

[0032] Next, an operation of the above-mentioned configuration is explained. It is set to the condition of having been moved to the back location of the suction hole 7 as the cutter member 10 in the tip treatment section 5 of the aspiration-biopsy implement 1 showed beforehand drawing 5 (A) at the time of use of the aspiration-biopsy implement 1 of the gestalt of this operation. In this condition, the insertion section 2 of the aspiration-biopsy implement 1 is inserted into a coelome through the forceps channel of an endoscope, and it guides at least to the doner site of the body tissue a patient's inside of the body. Rotation flattery of the tip treatment section 5 is carried out, and the suction hole 7 is made to contact at least the doner site of a body tissue by twisting a control unit 3 at this time.

[0033] Then, if the suction means 18 is operated and the interior of the tip treatment section 5 is made into negative pressure through the engagement slot 24 of the cutter member 10 from the lumen of the suction tube 9, a body tissue H will be drawn in the interior of the tip treatment section 5 through the suction hole 7 (refer to drawing 2).

[0034] Furthermore, a slider 13 is extruded and operated, with negative pressure held, and the cutter member 10 is slid on a tip side through the actuation wire 12. At this time, the body tissue H drawn in the tip treatment section 5 is excised from the suction hole 7 by shearing between cutting edges 8 outside inner cutting-edge 10b of the cutter member 10, and the suction hole 7.

[0035] The cutter member 10 is continuously moved further to a tip side after excision. Piece H2 of a body tissue excised as shown in drawing 6 with advance migration of the cutter member 10 at this time It is pushed in in the excision organization stowage 14.

[0036] Then, the cutter member 10 is pulled back at a back side. At this time, the height (the downward amount of protrusions) of the protrusion section 23 of the guide member 21 is the piece H2 of a body tissue, when the tip side is high. It is stopped by the protrusion section 23, stops in the excision organization stowage 14, and exfoliates from the cutter member 10.

[0037] Furthermore, piece H2 of a body tissue contained by the excision organization stowage 14 Since it is stopped by the protrusion section 23, it piles up in the excision organization stowage 14, and does not move to the suction hole 7 side of the tip

treatment section 5. Thereby, it is the 1st body tissue H2. Extraction actuation is completed.

[0038] Moreover, the above-mentioned piece H2 of a body tissue Extraction actuation is the piece H2 of a body tissue of the need number. It is repeated until it is extractable. Furthermore, piece H2 of a body tissue of the need number After extraction was completed, where extraction of the aspiration-biopsy implement 1 is carried out from the forceps channel of an endoscope, cap 16 is removed, and they are two or more pieces H2 of a body tissue. It collects.

[0039] Then, even if it is in the thing of the above-mentioned configuration, while there is the same effectiveness as the gestalt of the 1st operation In addition, piece H2 of a body tissue excised when returning the cutter member 10 to the hand side of the tip treatment section 5 especially with the gestalt of this operation It exfoliates from the cutter member 10 compulsorily by the protrusion section 23. Since it is held in the excision organization stowage 14, it is the piece H2 of a body tissue. It does not stick to the cutter member 10 and is the following piece H2 of a body tissue. The effectiveness which does not cause trouble is in an extraction activity.

[0040] In addition, as for this invention, it is needless to say that deformation implementation can be variously carried out in the range which is not limited to the gestalt of the above-mentioned implementation and does not deviate from the summary of this invention. Next, other characteristic technical matters of this application are written in addition as follows.

Account (additional remark term 1) The sheath section which can be inserted in the forceps channel of an endoscope, The suction means formed in said sheath section hand side, and the tip treatment section located in said sheath section distal end, The suction hole prepared in said tip treatment section, and the excision organization stowage which is established in the distal end of said tip treatment section, and has flexibility, Consist of cutter members arranged at said tip treatment circles, and a body tissue is attracted to said tip treatment circles through said suction hole with said suction means. The aspiration-biopsy implement characterized by excising a body tissue by relative displacement of said tip treatment section and said cutter member, and containing an excision organization to said stowage.

[0041] (Technical problem which is going to solve the additional remark term 1) However, with the structure indicated by the U.S. Pat. No. 4651753 official report, since the organization stowage e is established in the tip side of the suction hole c as shown in drawing 8 , and it does not have flexibility, the overall length of the hard section which cannot curve becomes long, and it becomes difficult to pass a part for a bend at the time of the insertion to an endoscope. Moreover, the die length of the organization stowage e was restricted and there was a trouble that the quantity of the organization which can extract also decreased in one insertion to an endoscope.

[0042] This invention aims at having been made in view of the aforementioned problem, and having the stowage which contains much excision organizations, and the insertion nature to an endoscope offering a good aspiration-biopsy implement.

[0043] (The means for solving a technical problem of the additional remark term 1, and operation) It is characterized by this invention constituting an organization stowage from a material with flexibility in an aspiration-biopsy implement. The sheath section is inserted in the forceps channel of an endoscope, and a body tissue is drawn in the

suction hole prepared in the tip treatment section of a sheath section distal end with the suction means formed in the sheath section hand side. A cutter member is moved to a tip side, and it excises by the suction hole, the cutter member, and ** that is not carried, and contains to an organization stowage. After excising and containing two or more organizations, extraction of the aspiration-biopsy implement is carried out from an endoscope, and organizations are collected.

[0044] (Effectiveness of the additional remark term 1) When an organization stowage has flexibility, the insertion nature for the bend of an endoscope improves. Moreover, since it is possible to lengthen the overall length of an organization stowage, much organization extraction is attained in one insertion to an endoscope.

[0045] (Additional remark term 2) The sheath section which can be inserted in the forceps channel of an endoscope, The suction means formed in said sheath section hand side, and the tip treatment section located in said sheath section distal end, The suction hole prepared in said tip treatment section, and the excision organization stowage established in the distal end of said tip treatment section, In the aspiration-biopsy implement which has a cutter member in said tip treatment circles, excises a body tissue by relative displacement of said tip treatment section and said cutter member, and contains an excision organization to said stowage The aspiration-biopsy implement characterized by establishing an organization stop means to extend in the direction of a medial axis from the inside of said tip treatment section.

[0046] (Additional remark term 3) Aspiration-biopsy implement of the additional remark term 2 characterized by said organization stop means having elasticity.

(Additional remark term 4) Aspiration-biopsy implement of the additional remark term 2 characterized by said organization stop means being rigidity.

[0047] (Additional remark term 5) It is the aspiration-biopsy implement of the additional remark term 4 which engages with the free passage hole with which said organization stop means was formed in said cutter section, and is characterized by the height of said organization stop means having a high tip side, and a hand side being low.

[0048] (Additional remark term 6) Aspiration-biopsy implement of the additional remark terms 2-5 characterized by said stowage having flexibility.

(The conventional technique of the additional remark terms 1-6) This invention relates to the aspiration-biopsy implement which passes, attracts and excises a body tissue endoscopically and extracts the preparation. In order to extract an organization with a general aspiration-biopsy implement, an organization is attracted to a suction hole, inserting the flexible sheath section in the forceps channel of an endoscope, making the suction hole prepared in the point contact at least a doner site in the living body, and applying negative pressure from the outside of the body. An organization is excised by actuation which moves the cutter formed in the point to a tip side from a hand side. An explant can be contained to the organization stowage established in the tip side of a suction hole. About the aspiration-biopsy implement which extracts two or more organizations by the above actuation, it is indicated in the U.S. Pat. No. 4651753 official report.

[0049] (Technical problem which is going to solve the additional remark terms 2-6) However, with the structure indicated by the U.S. Pat. No. 4651753 official report, the excision organization contained by Stowage e may return to the location of the suction hole c by migration of an aspiration-biopsy implement etc., and the next organization

extraction may become impossible.

[0050] This invention was not made in view of the aforementioned problem, and aims at offering the aspiration-biopsy implement which an excision organization does not move out of a stowage.

(The means for solving a technical problem of the additional remark terms 2-6, and operation) This invention is characterized by forming an organization stop means in the tip treatment section located in the hand side of an organization stowage in an aspiration-biopsy implement. An aspiration-biopsy implement is guided at least to an organization doner site through the forceps channel of an endoscope, and a body tissue is drawn in the suction hole prepared in the tip treatment section with the suction means formed in the sheath section hand side. A cutter member is moved to a tip side, an organization is excised by the cutter member, the suction hole, and ** that is not carried, and it contains to an organization stowage. An organization does not move outside from a stowage with an organization stop means. After excising and containing two or more organizations, extraction of the aspiration-biopsy implement is carried out from an endoscope, and organizations are collected.

(Effectiveness of the additional remark terms 2-6) The explant contained to the organization stowage does not move to the tip treatment section, and trouble is not caused to continuous organization extraction.

[0051]

[Effect of the Invention] Since the excision organization stowage arranged rather than the suction hole in the tip treatment section at the tip side was formed with the ingredient which has flexibility according to this invention, while being able to contain the body tissue of excised a large number, insertion nature into the forceps channel of an endoscope can be made good.

PATENT ABSTRACTS OF JAPAN

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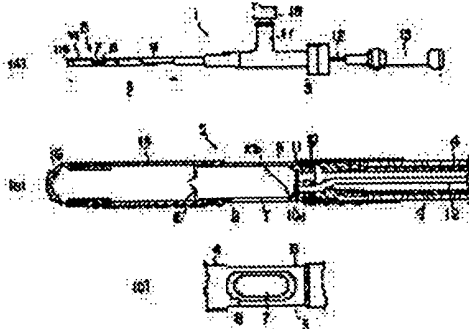
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(54) SUCTION BIOPSY TOOL



(57) Abstract:

PROBLEM TO BE SOLVED: To house many excised organismic tissues by disposing a suction means and a cutter member inside a tip treatment part and arranging an excised tissue housing part housing flexibility for housing the organismic tissues excised by the movement of the cutter member on the tip side from the suction hole of the tip treatment part.

SOLUTION: The cutter member 10 is disposed movably in an axial direction inside the treatment part main body 6 composed of a cylindrical body of the tip treatment part 5, the tip part of an operation wire 12 is fixed to the cutter member 10 and the base end part of the operation wire 12 is extended to the side of an operation part 3 and fixed to a slider 13. Also, a cylindrical excised tissue housing part 14 for housing the organismic tissues excised by the forward movement of the cutter member 10 is connected to the tip part of the treatment part

main body 6 and the outer end part of a flap 15 having the flexibility for openably and closably closing the rear end part opening surface of the excised tissue housing part 14 is fixed to a connection part between the excised tissue housing part 14 and the treatment part main body 6 of the tip treatment part 5 on the inner peripheral surface of the excised tissue housing part 14.